

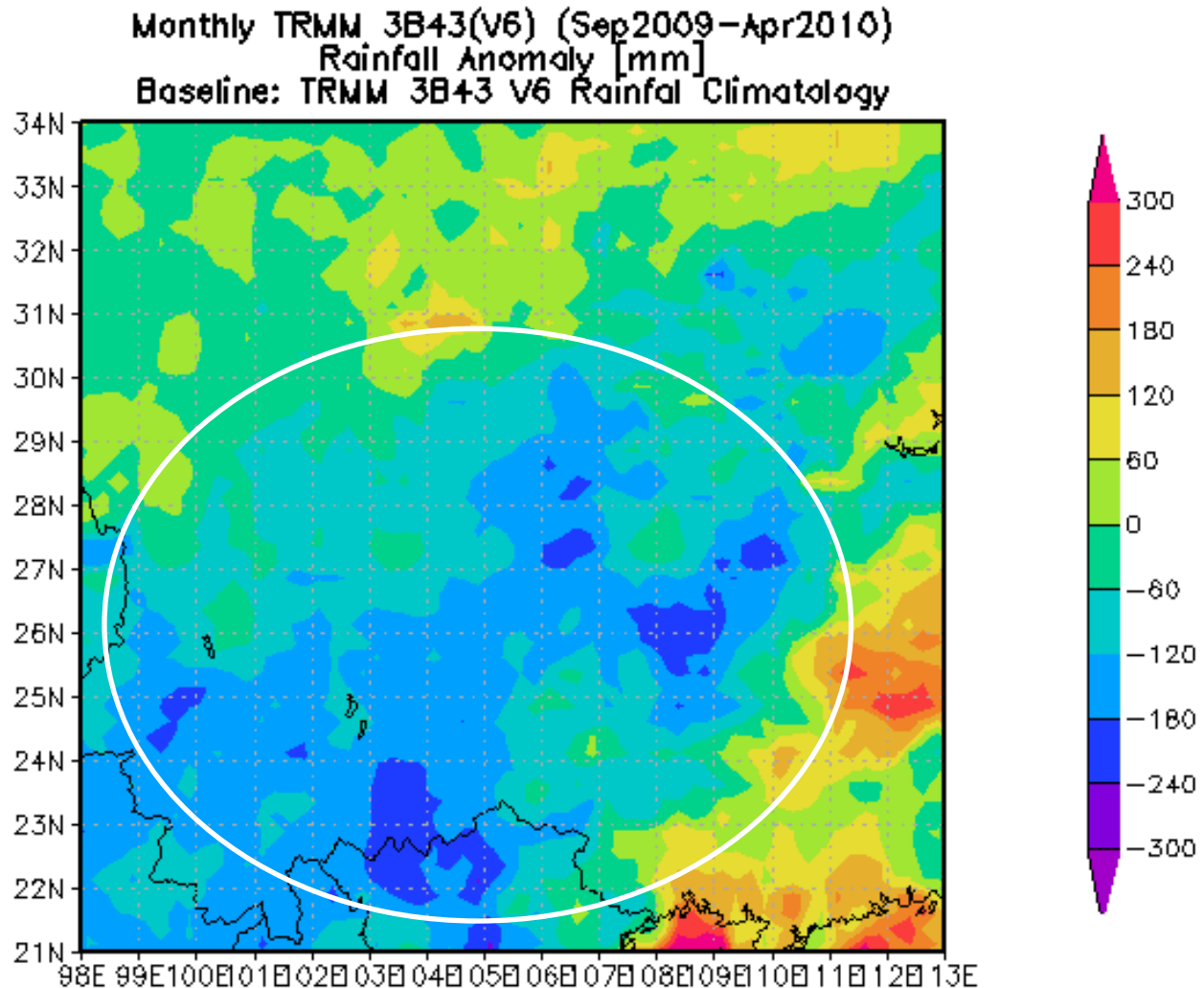
# From Drought to Flood: Southern China 2010

A Case Study

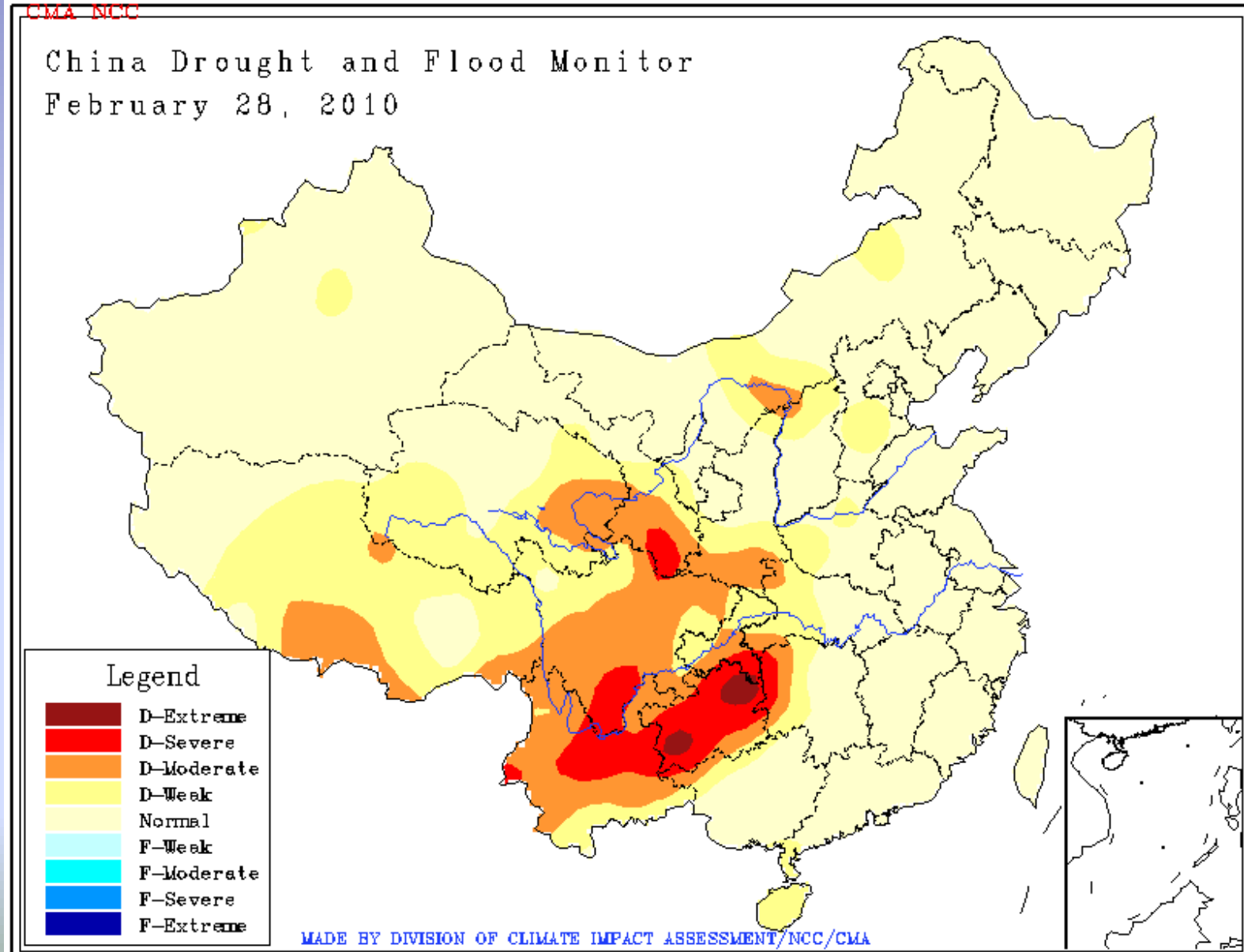
Amanda DePasquale

GSFC Summer Intern 2010

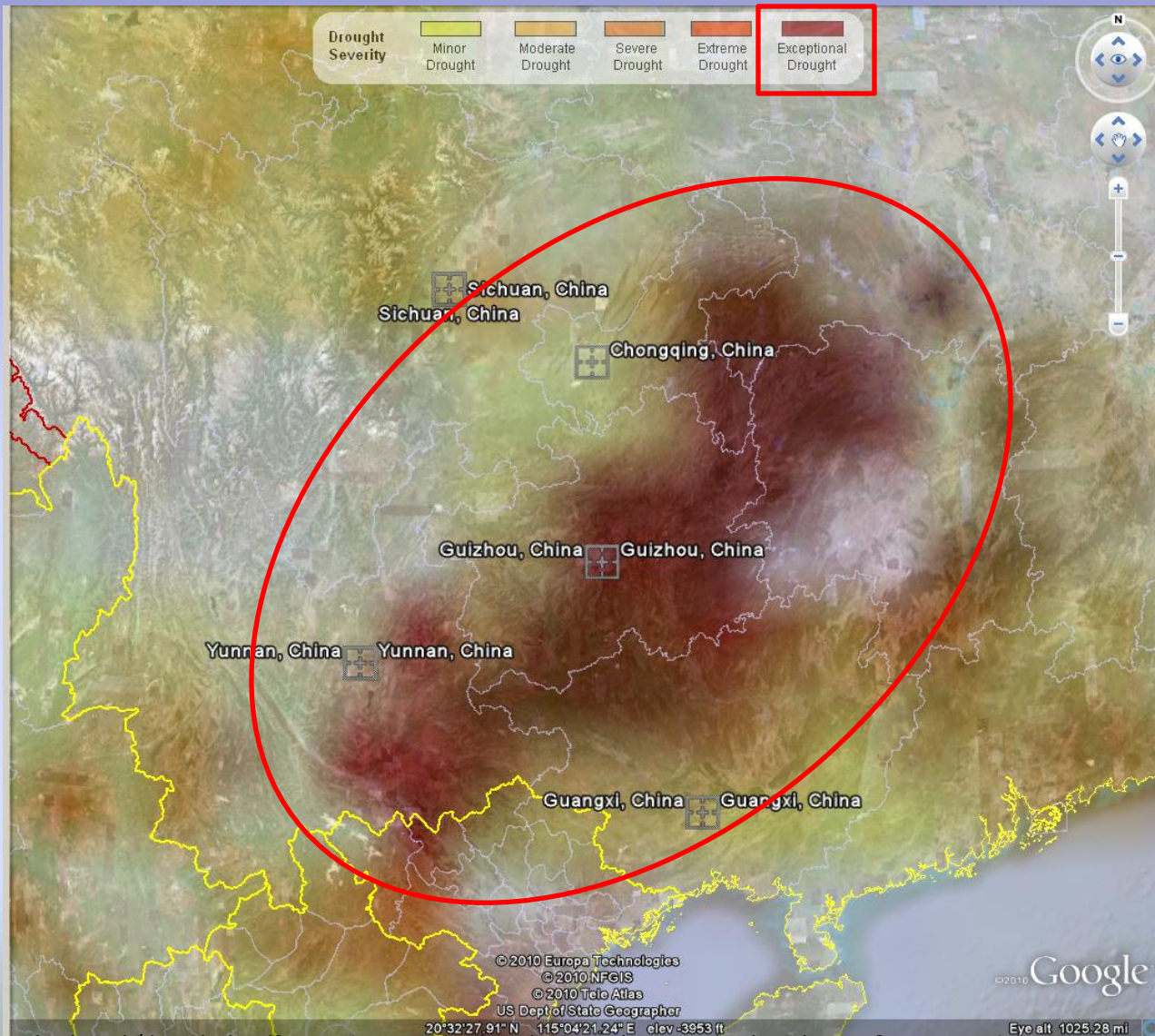
# Drought: September 2009 to April 2010 Anomaly



# February Drought/Flood Monitor



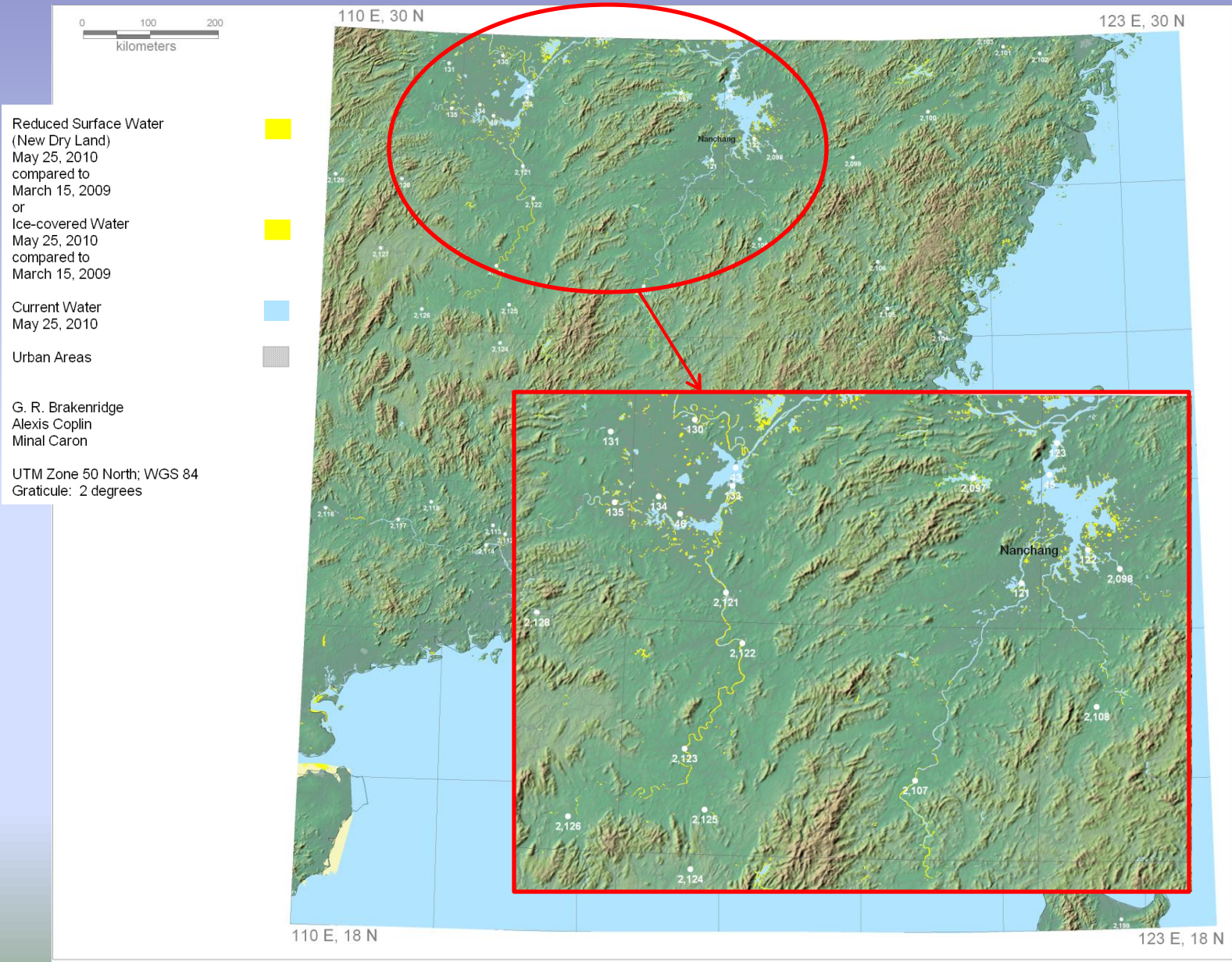
# June Drought Monitor Areas



[http://drought.mssl.ucl.ac.uk/drought.html?map=%2Fwww%2Fdrought%2Fweb\\_pages%2Fdrought.map&program=%2Fcgi-bin%2Fmapserv&root=%2Fwww%2Fdrought%2F&map\\_web\\_imagepath=%2Ftmp%2F&map\\_web\\_imageurl=%2Ftmp%2F&map\\_web\\_template=%2Fdrought.html](http://drought.mssl.ucl.ac.uk/drought.html?map=%2Fwww%2Fdrought%2Fweb_pages%2Fdrought.map&program=%2Fcgi-bin%2Fmapserv&root=%2Fwww%2Fdrought%2F&map_web_imagepath=%2Ftmp%2F&map_web_imageurl=%2Ftmp%2F&map_web_template=%2Fdrought.html)



# Dartmouth Flood Observatory Drought Map



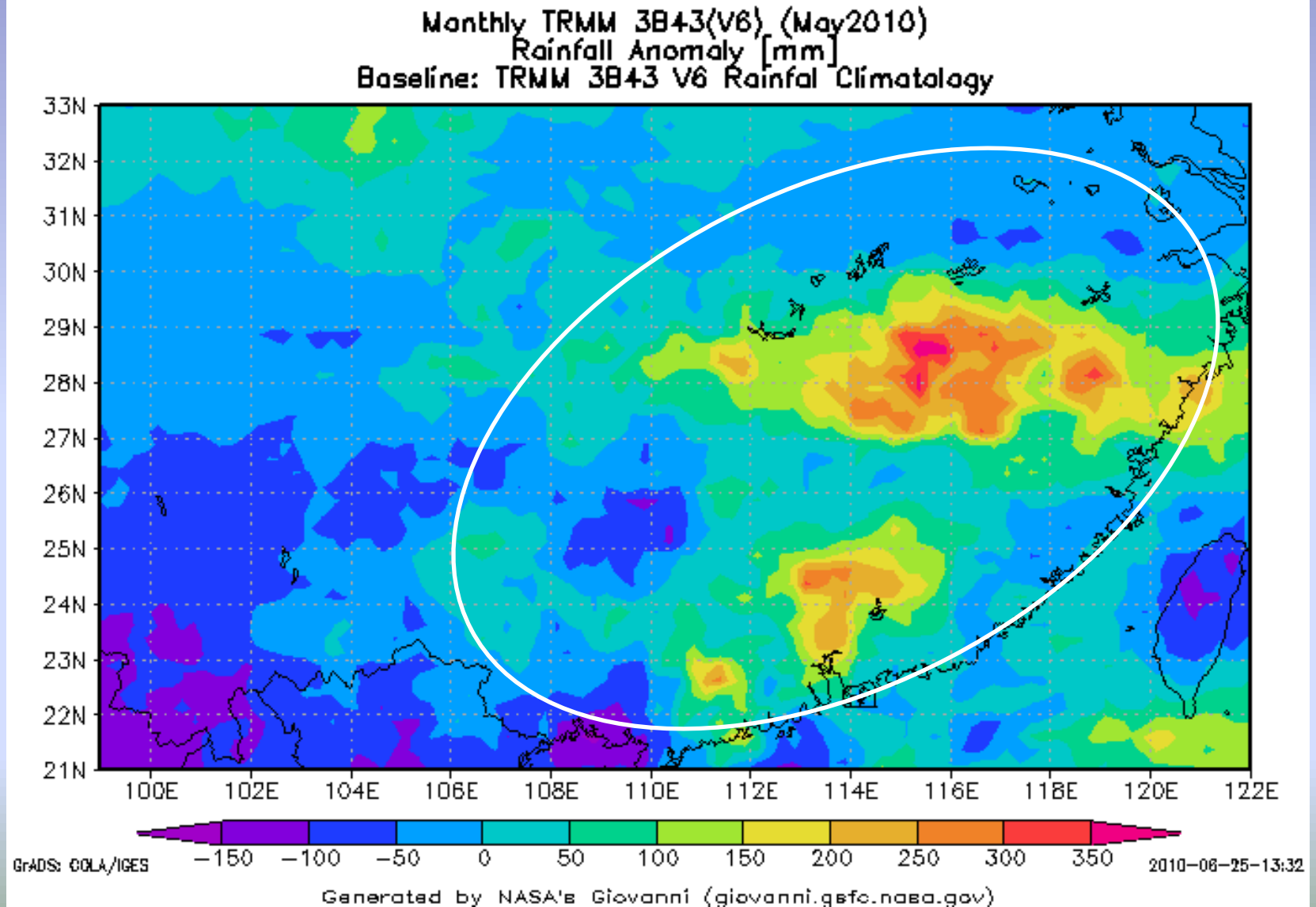






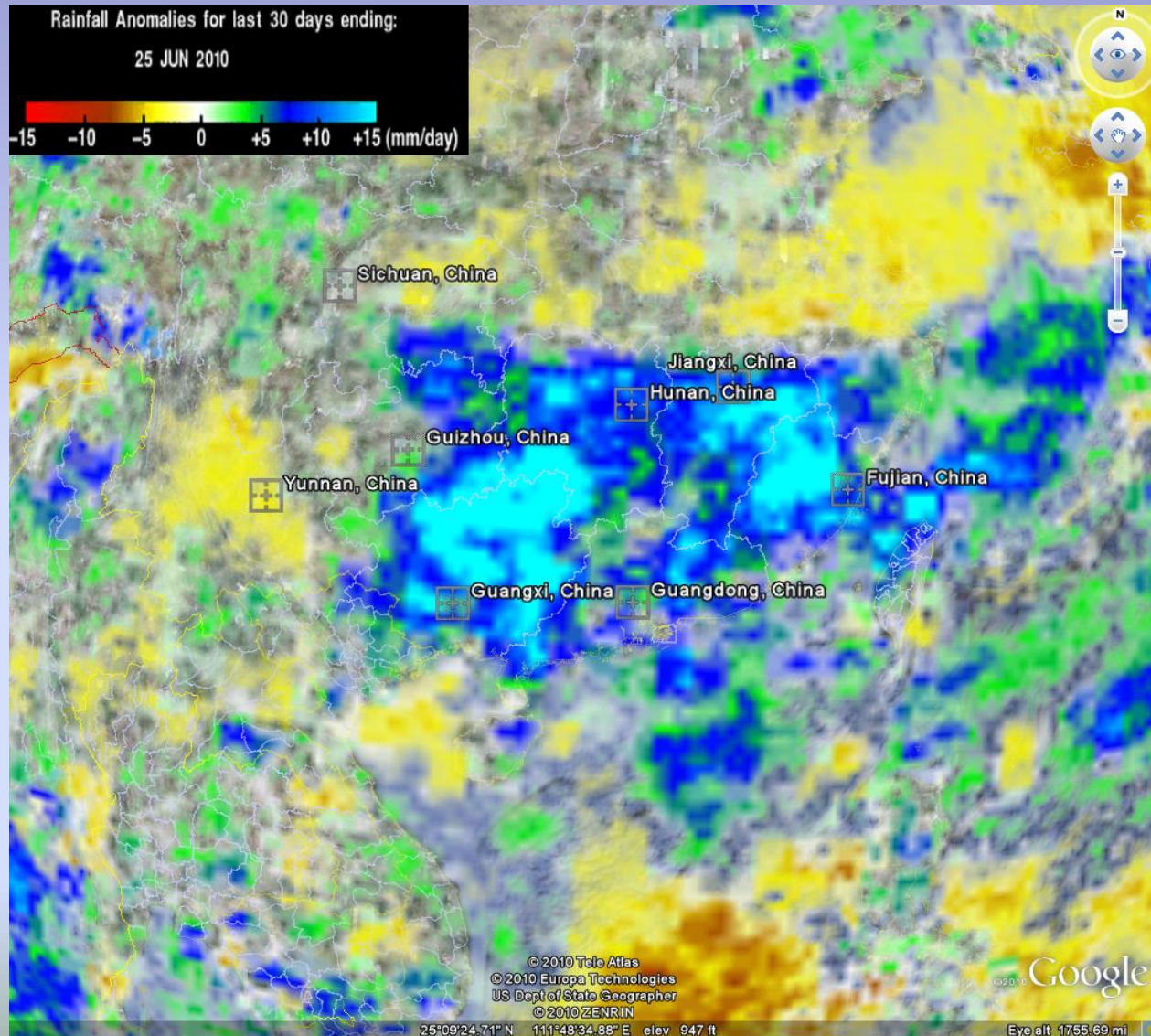


# Flood: May 2010 Anomaly



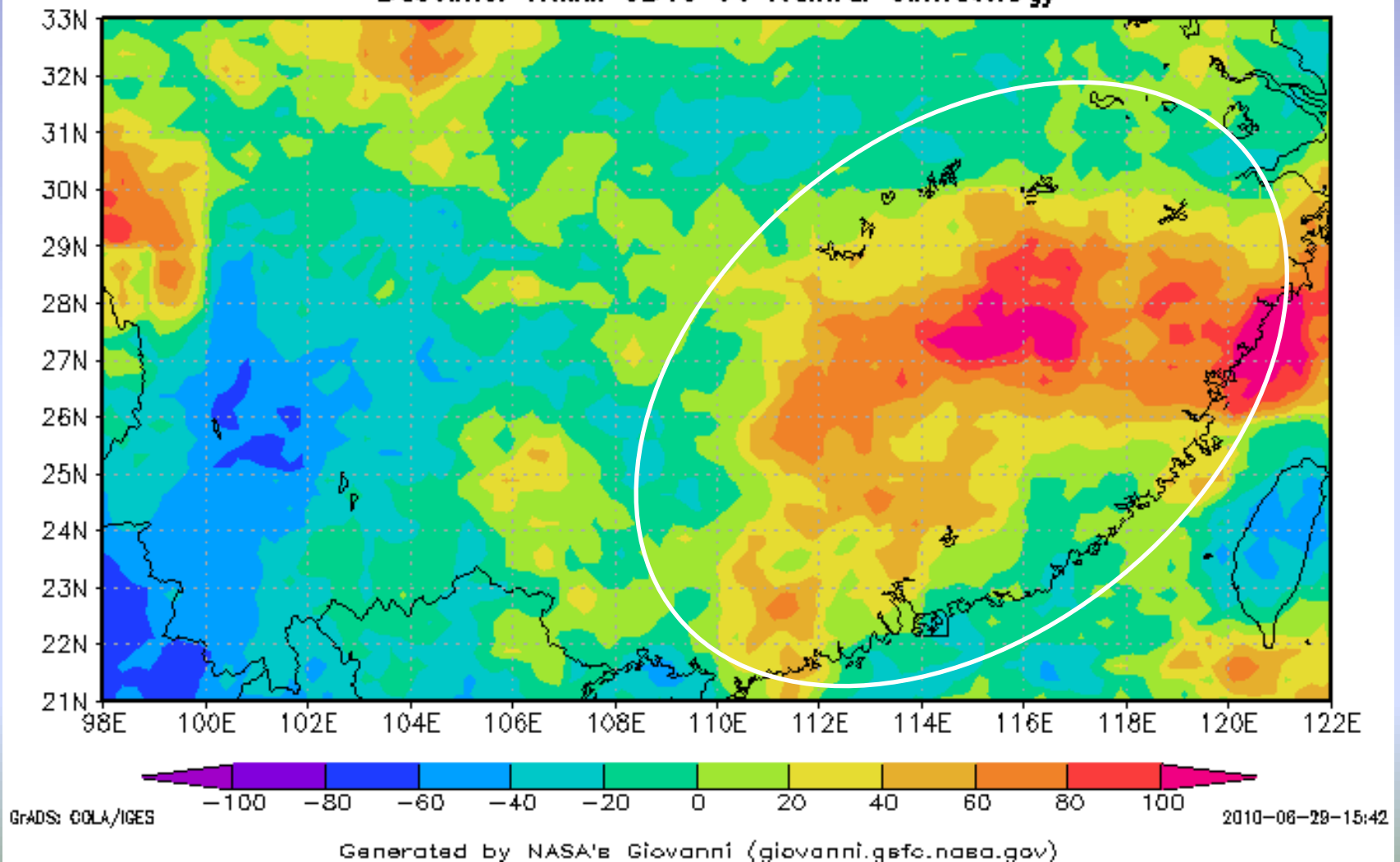


# Rainfall Anomaly from May 26 to June 25, 2010



# Normalized Anomaly April to May 2010

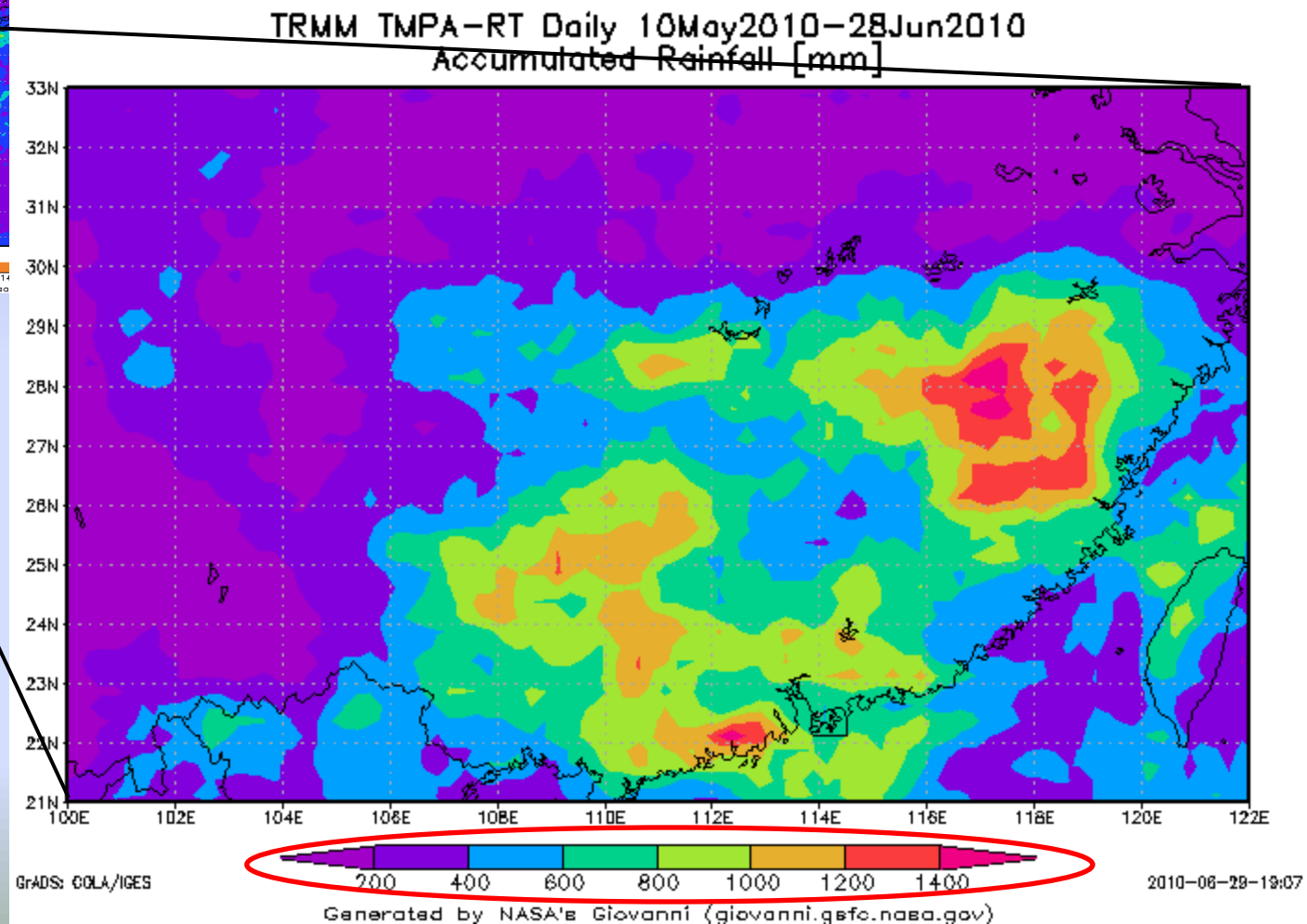
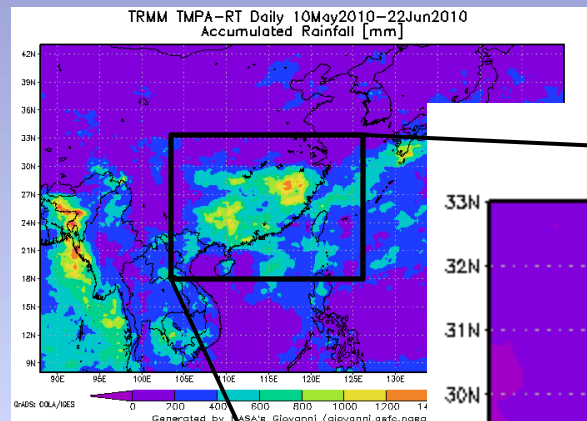
Monthly TRMM 3B43(V6) (Apr2010-May2010)  
Normalized Rainfall Anomaly [%]  
Baseline: TRMM 3B43 V6 Rainfall Climatology



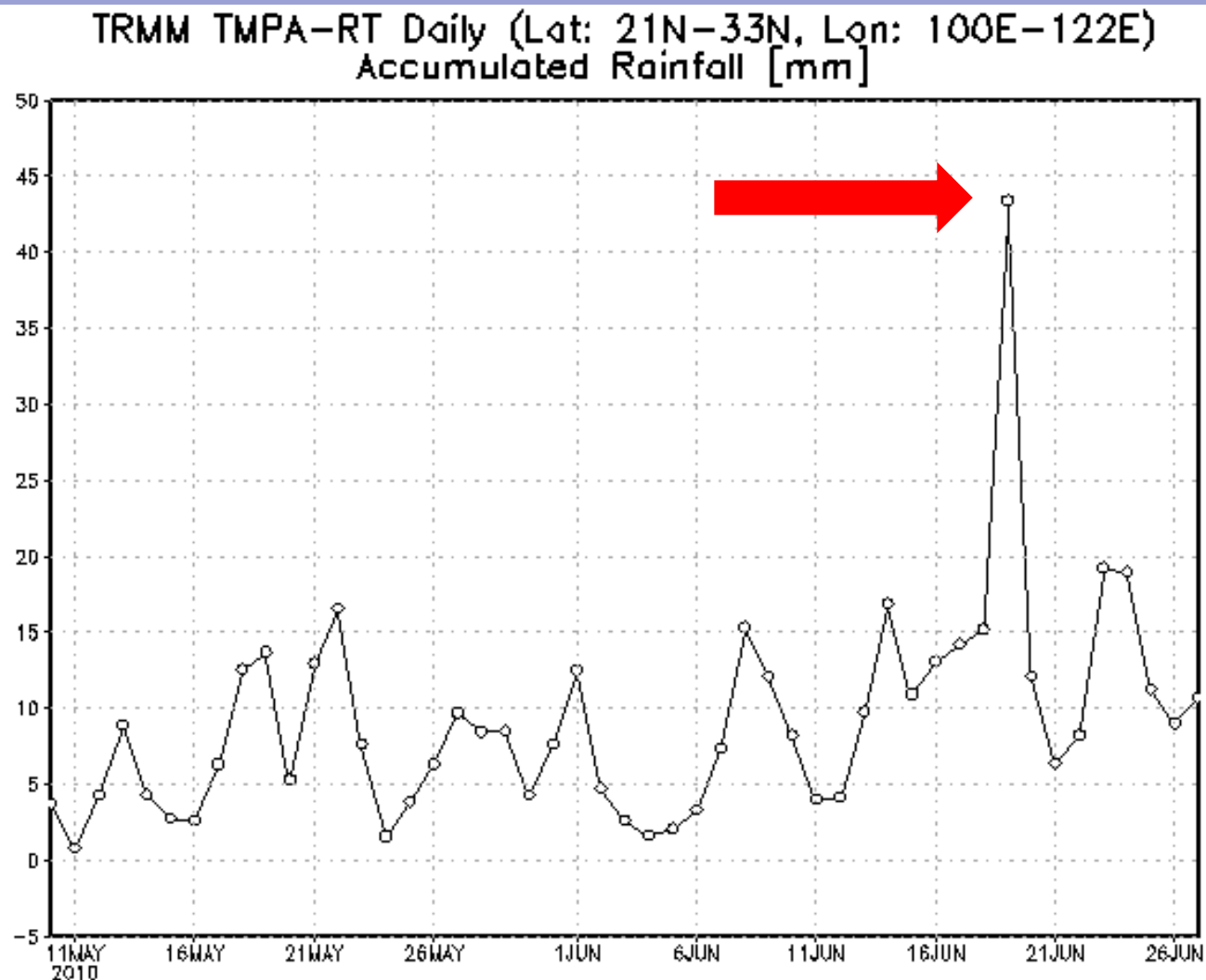


# Accumulated Rainfall

## May 10 – June 28



# Accumulated Rainfall Time Series

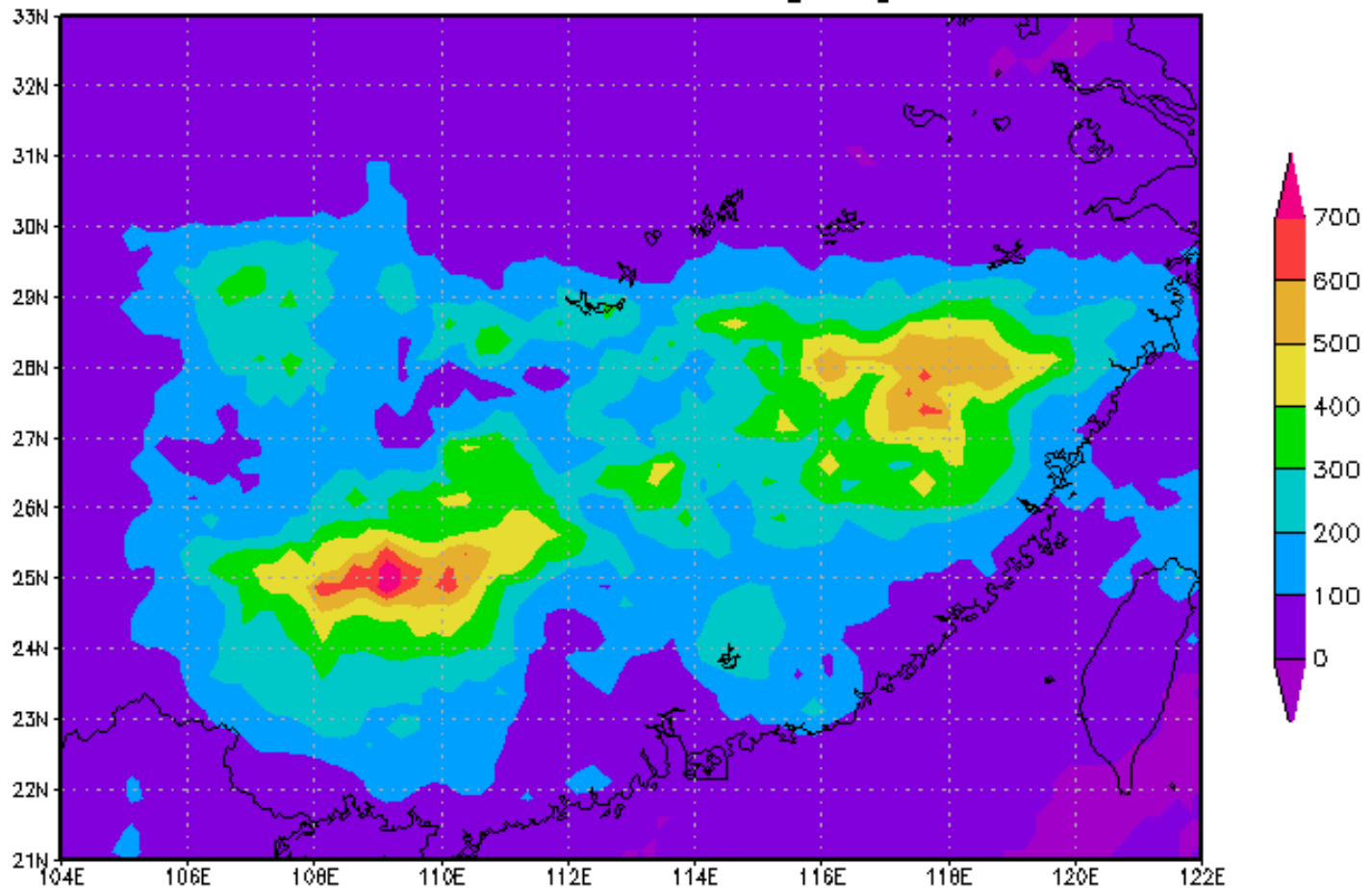




# Accumulated Rainfall

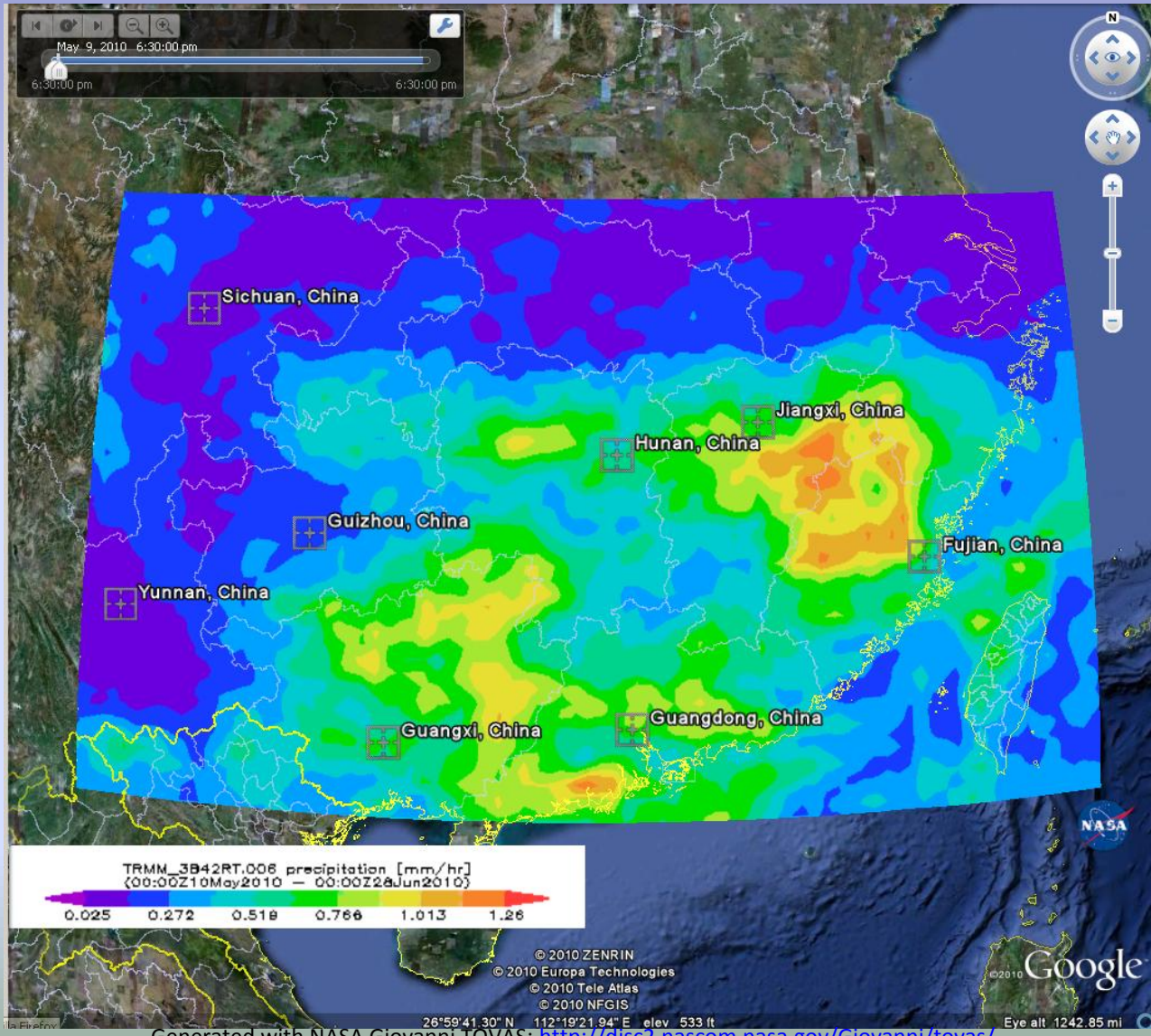
## June 16 - 21

TRMM TMPA-RT Daily 16Jun2010-21Jun2010  
Accumulated Rainfall [mm]



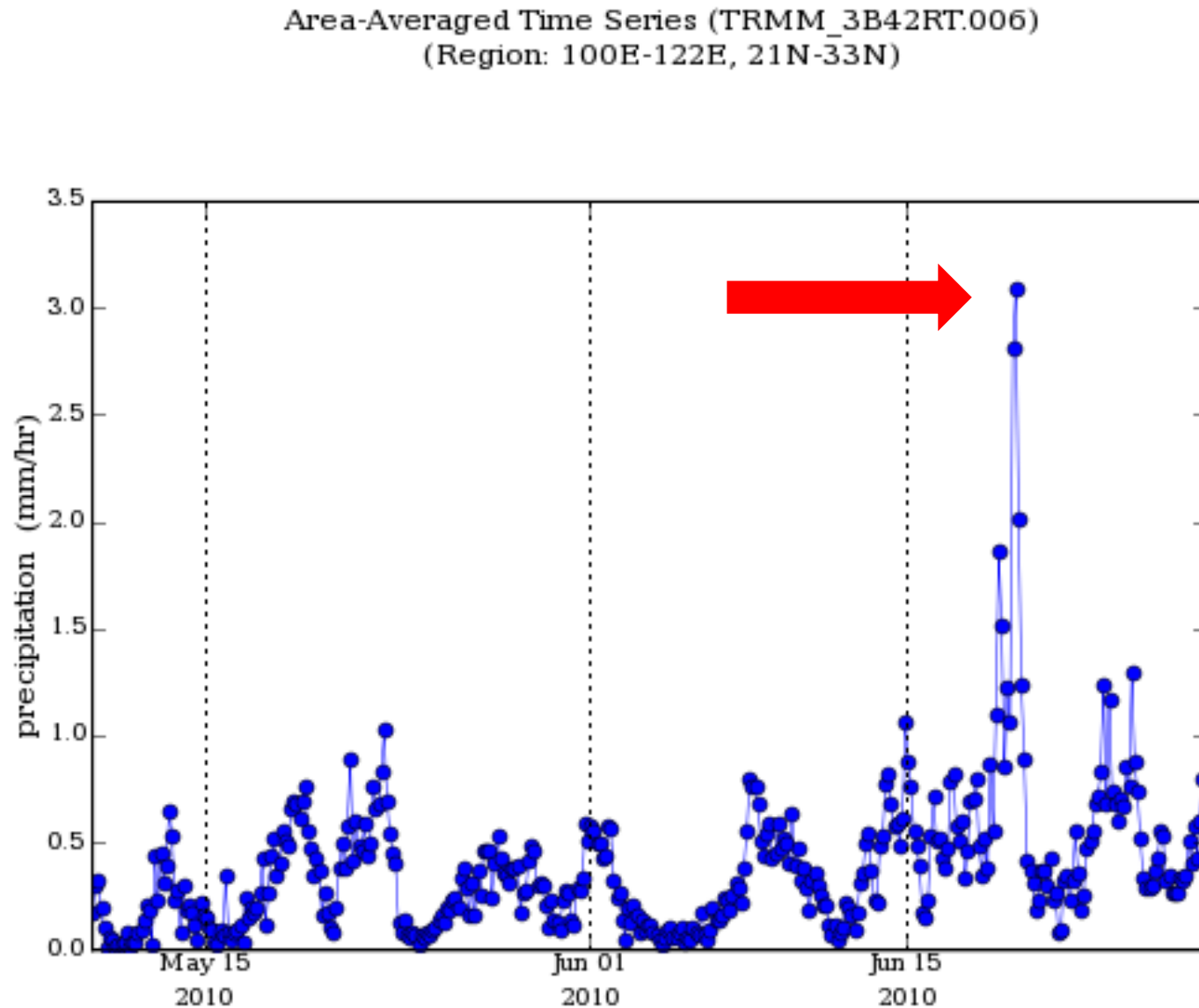
# Rain Rate in Google Earth

## May 10 to June 28, 2010

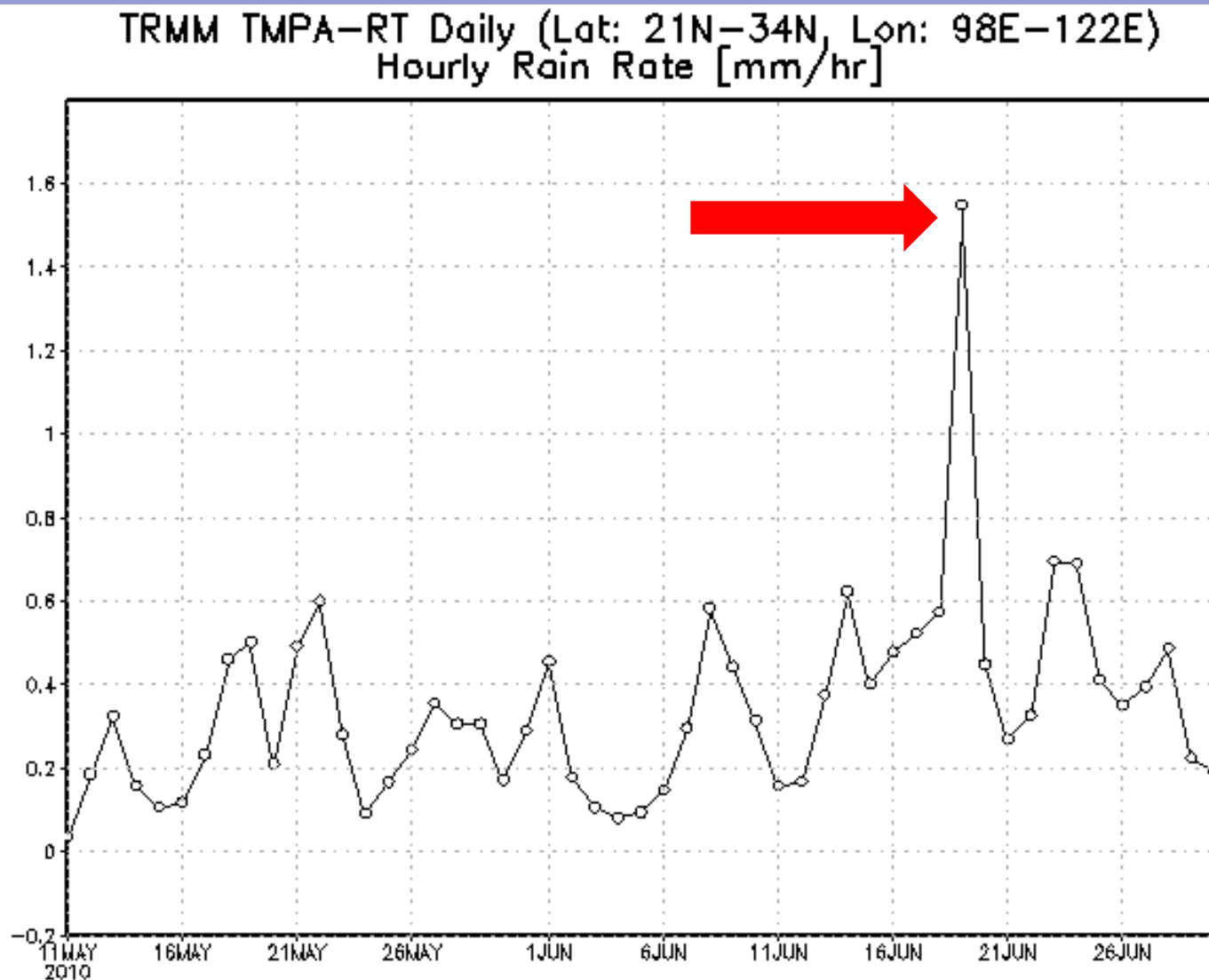




# Rain Rate Time Series

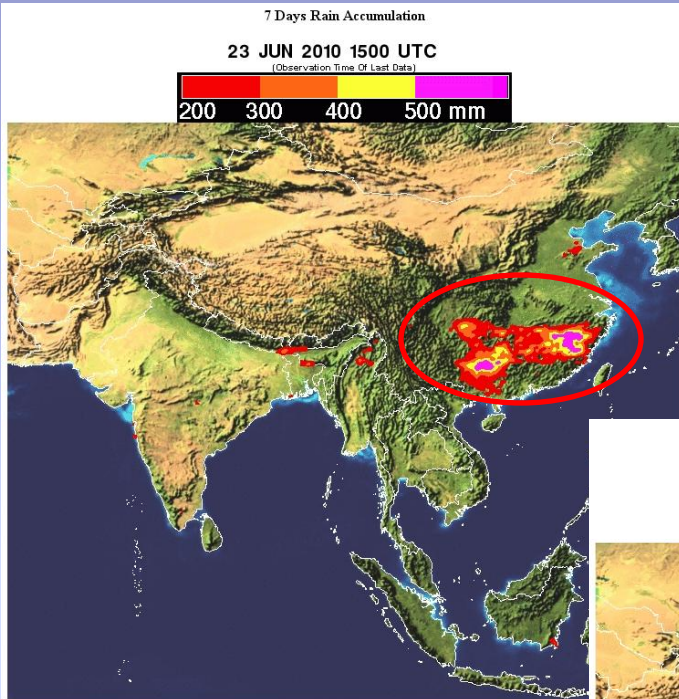


# Daily Rain Rate Time Series

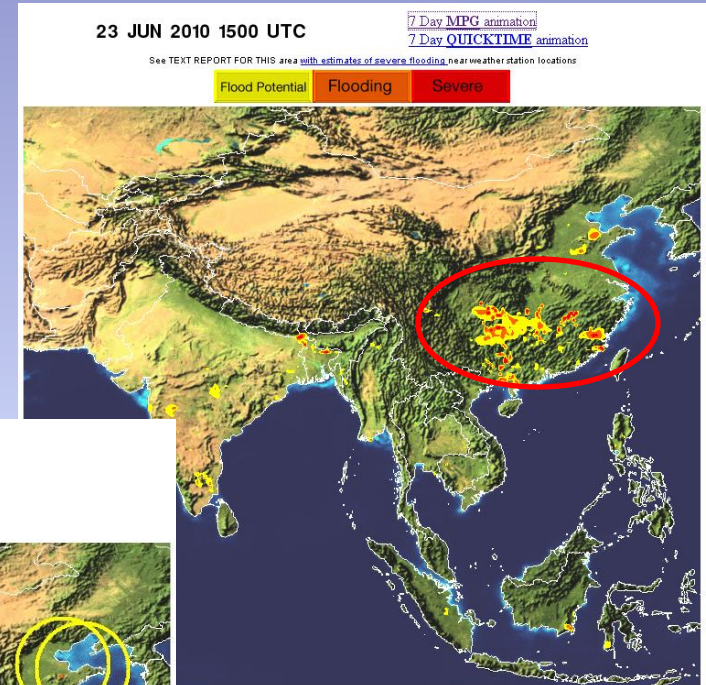




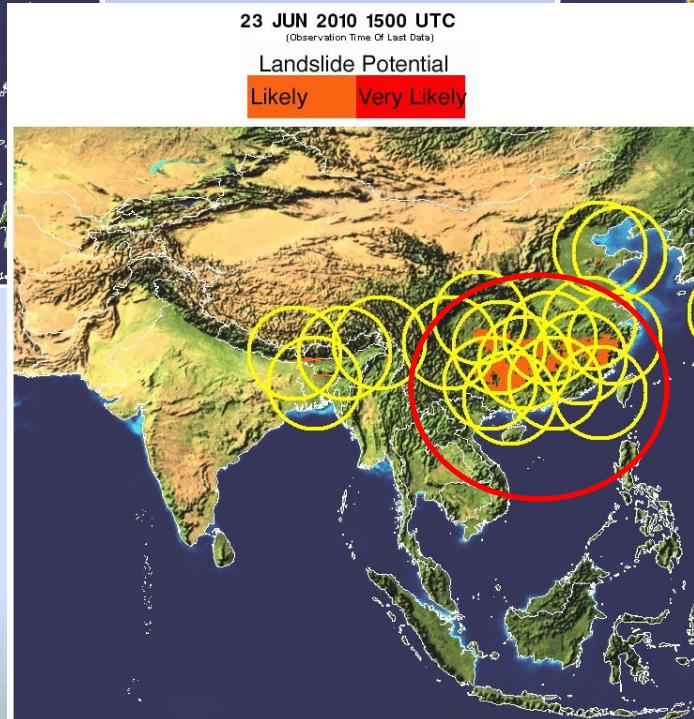
# Risks of Heavy Rainfall



Rain Accumulation



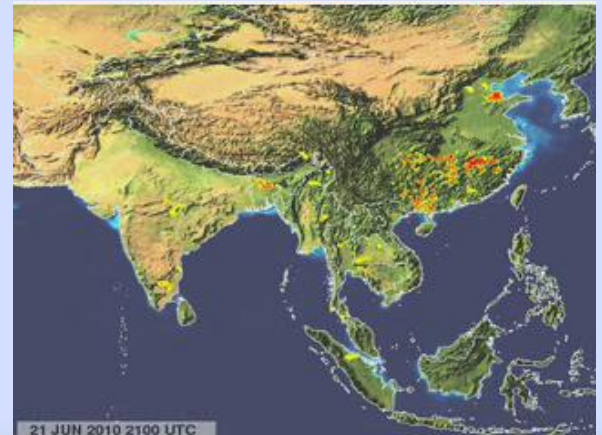
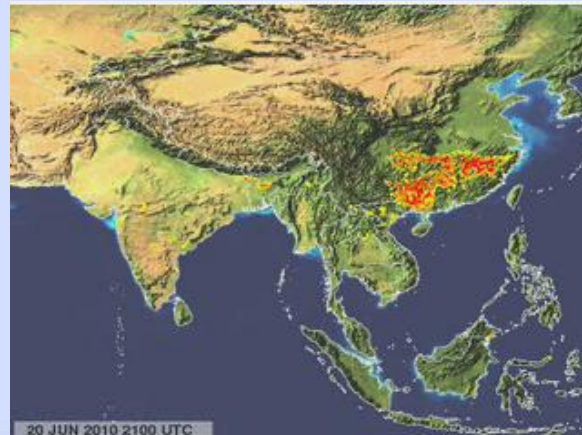
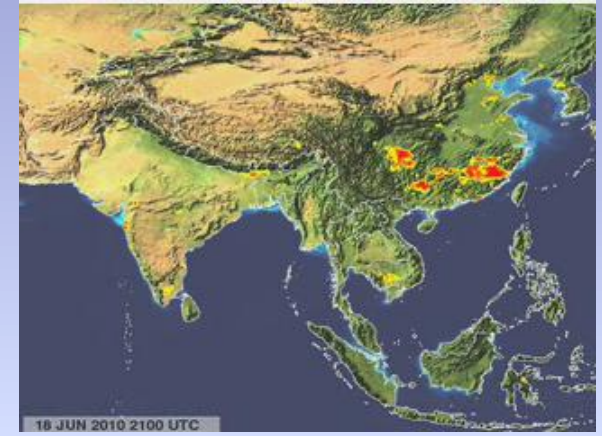
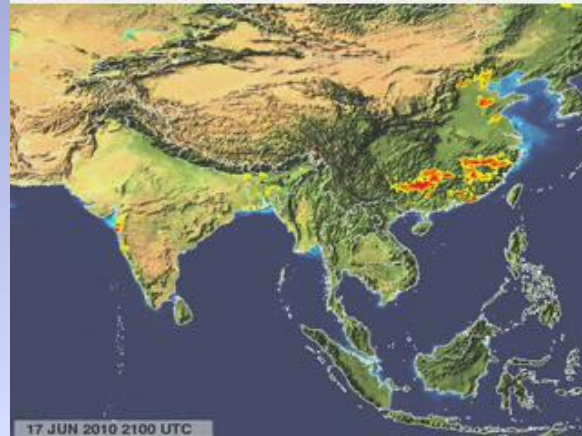
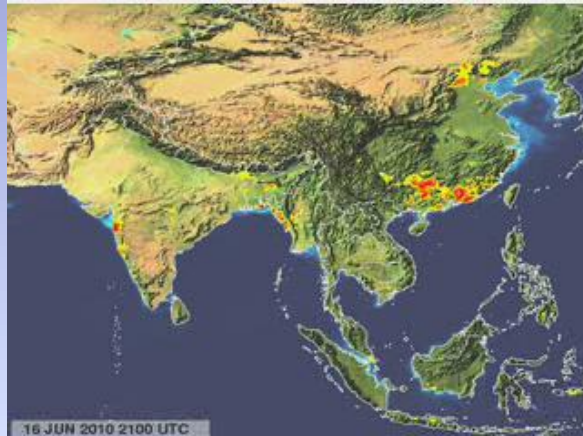
Flood Potential



Landslide Potential



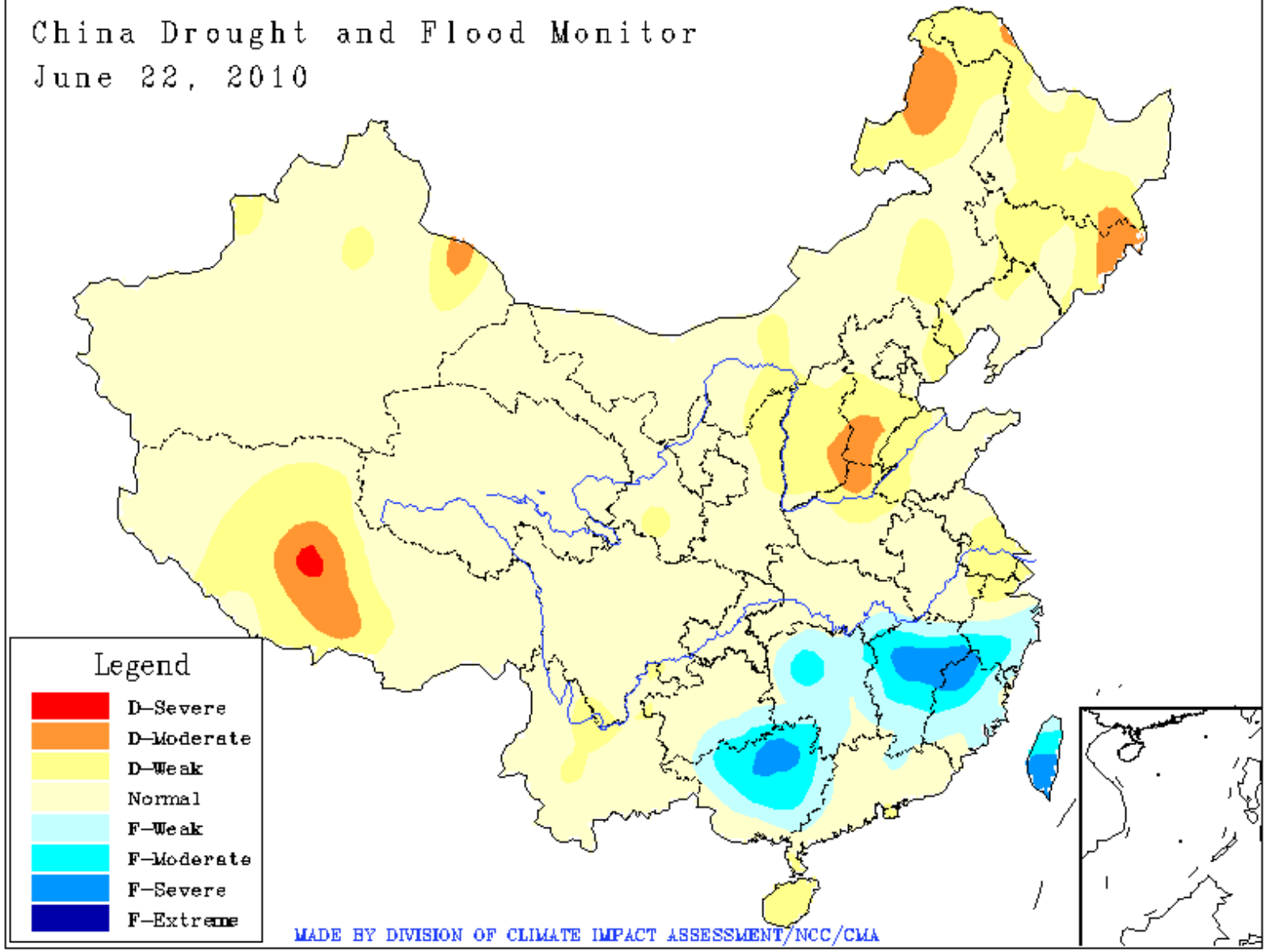
# Flooding Potential For June 16 to June 23



# June Drought/Flood Monitor

CMA NCC

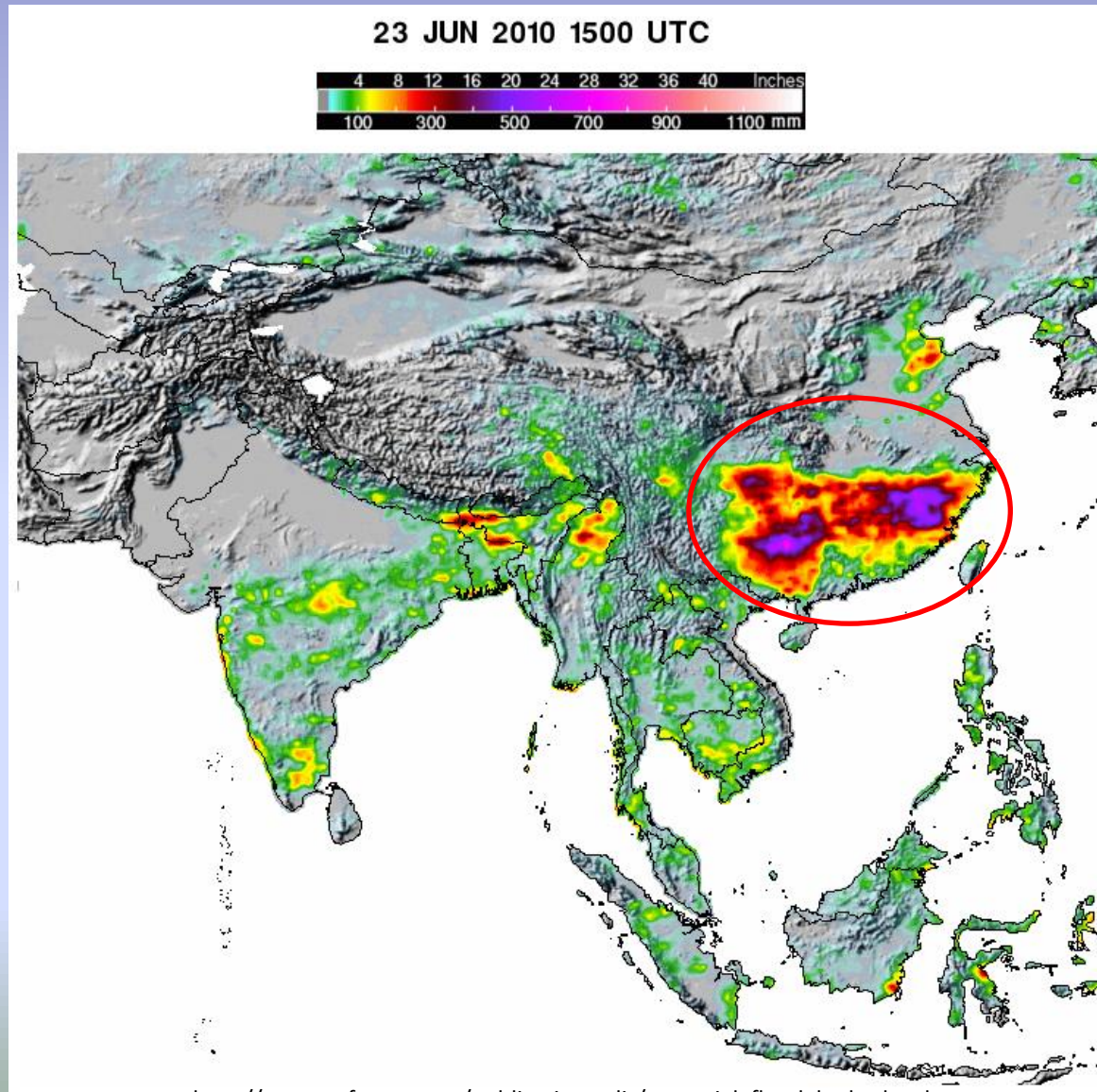
China Drought and Flood Monitor  
June 22, 2010





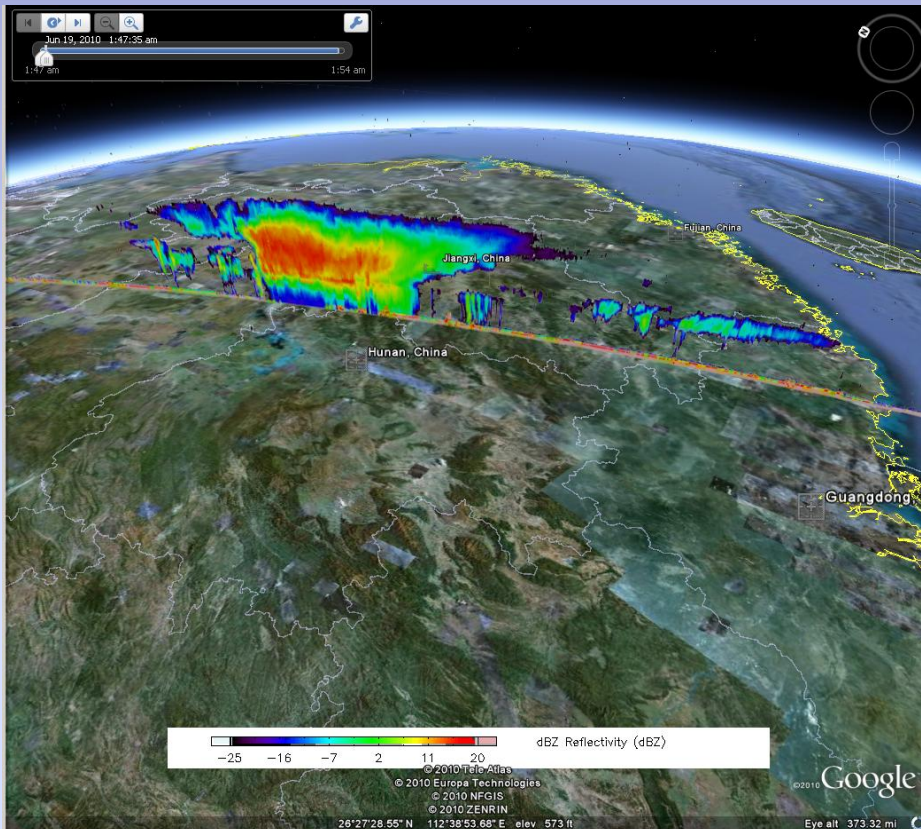
# Accumulated Rainfall

## June 23, 2010

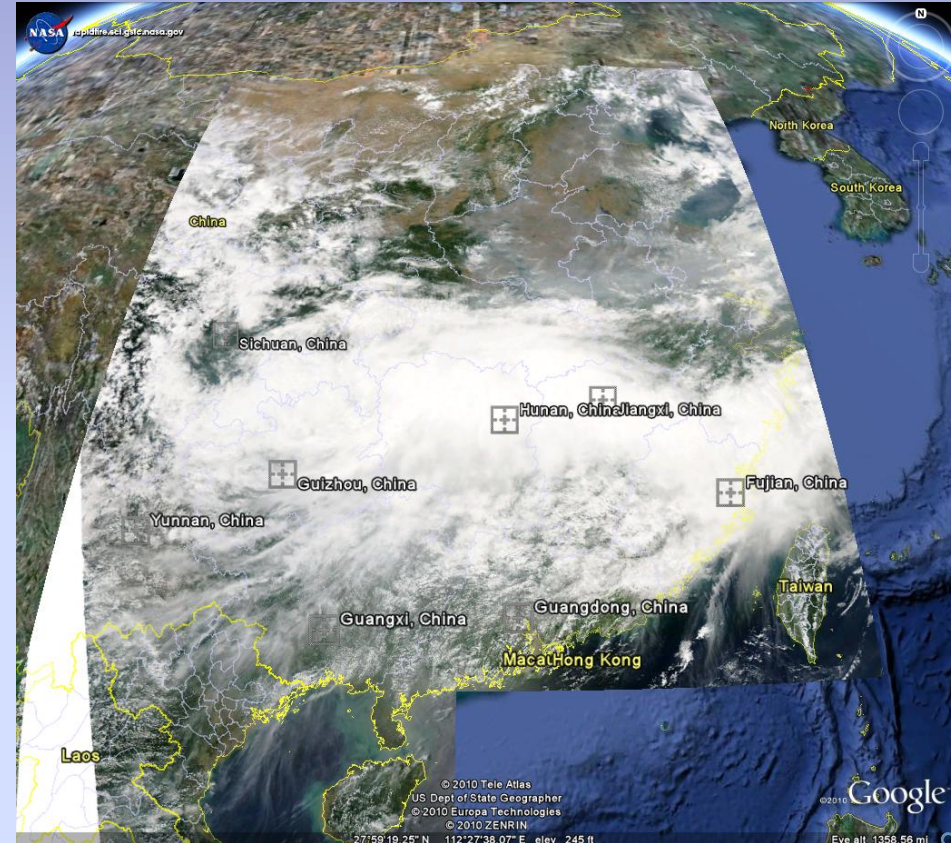




# 3D Cross Section and Visible Imagery June 19



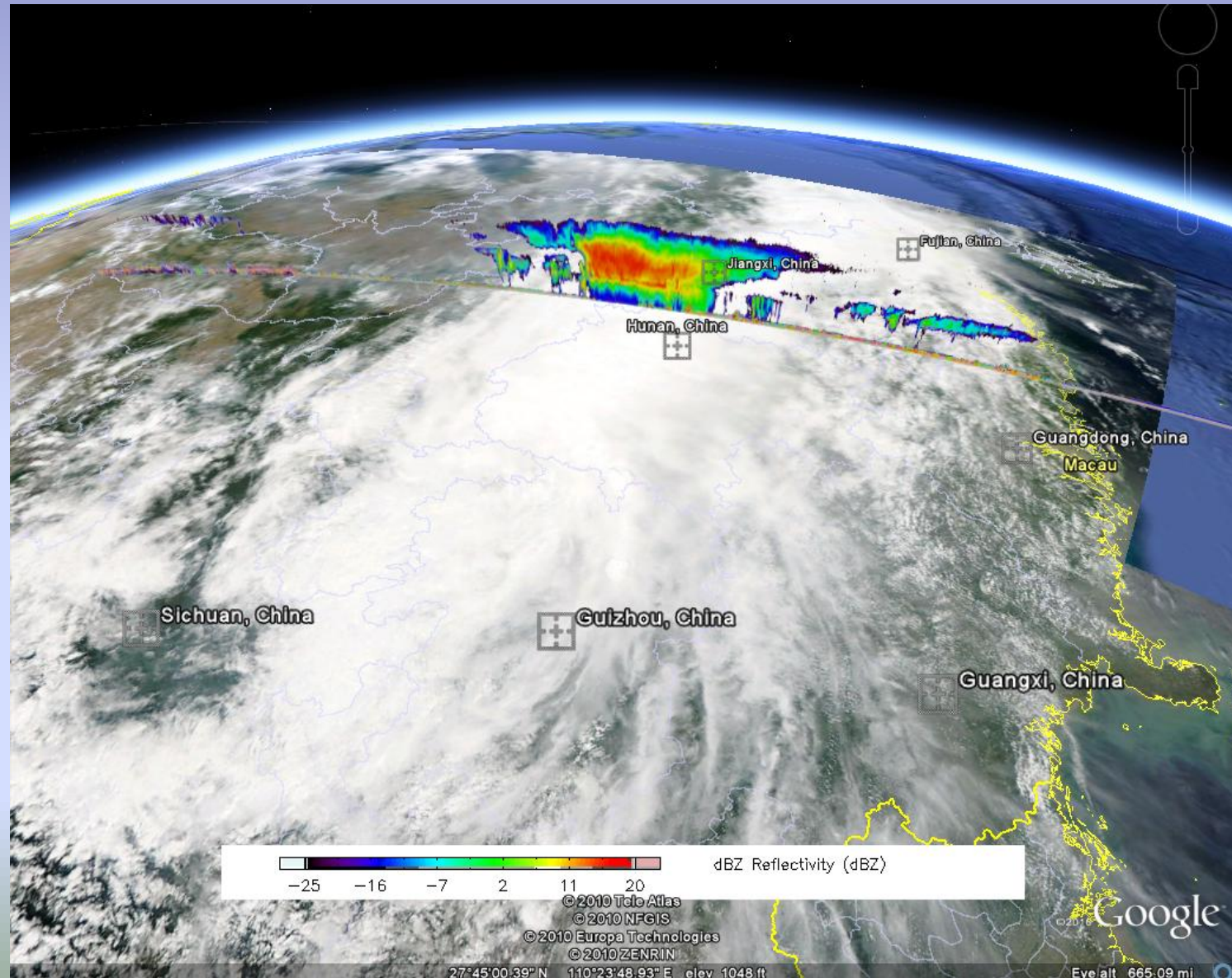
CloudSat Reflectivity in  
Google Earth, June 19



MODIS Rapid Response Image  
in Google Earth, June 19

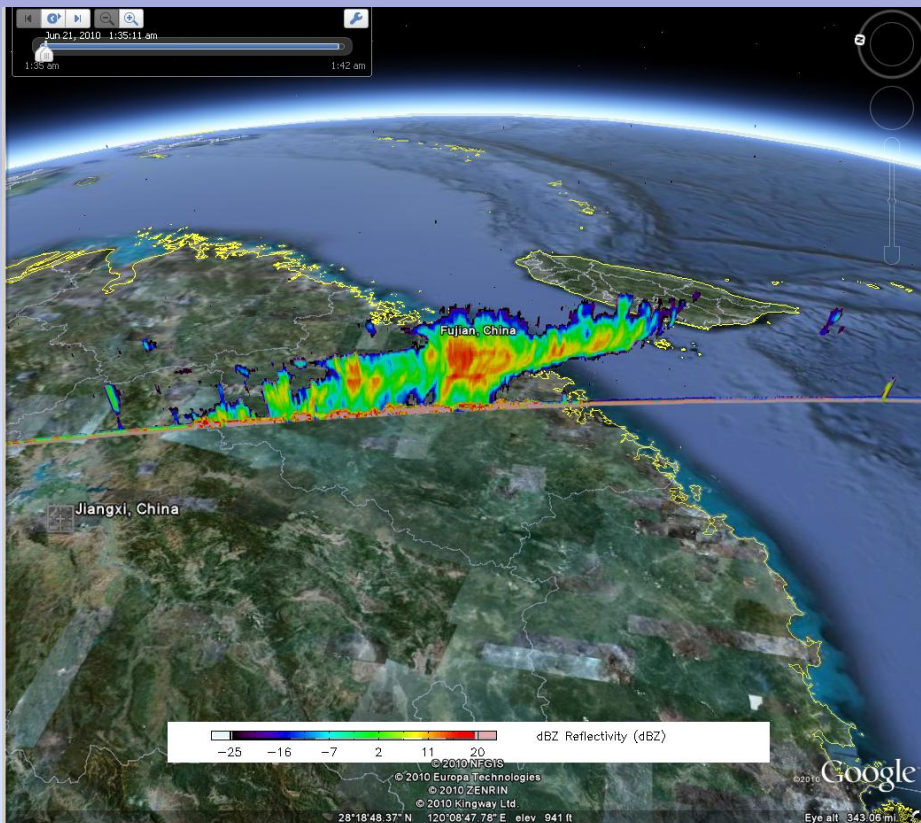


# 3D Cross Section and Visible Imagery Overlaid on Google Earth, June 19

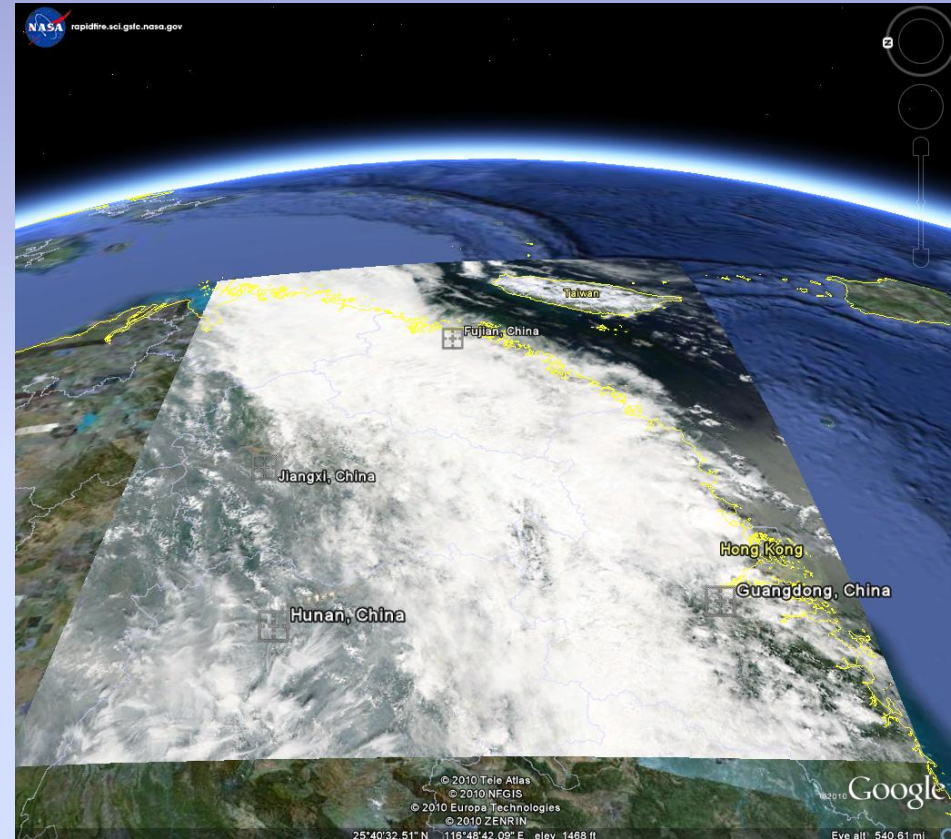




# 3D Cross Section and Visible Imagery June 21

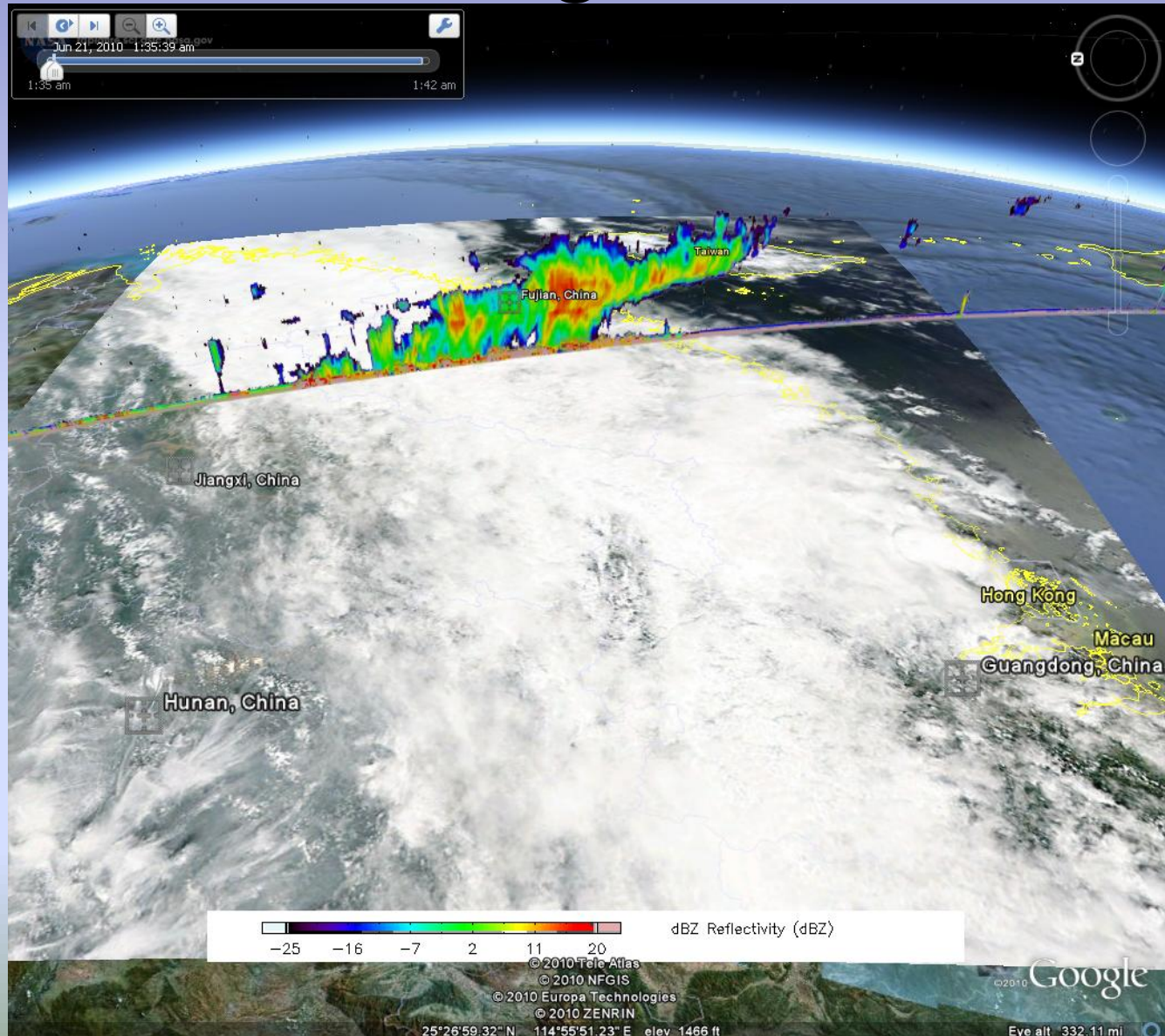


CloudSat Reflectivity in  
Google Earth, June 21



MODIS Rapid Response Image  
in Google Earth, June 21

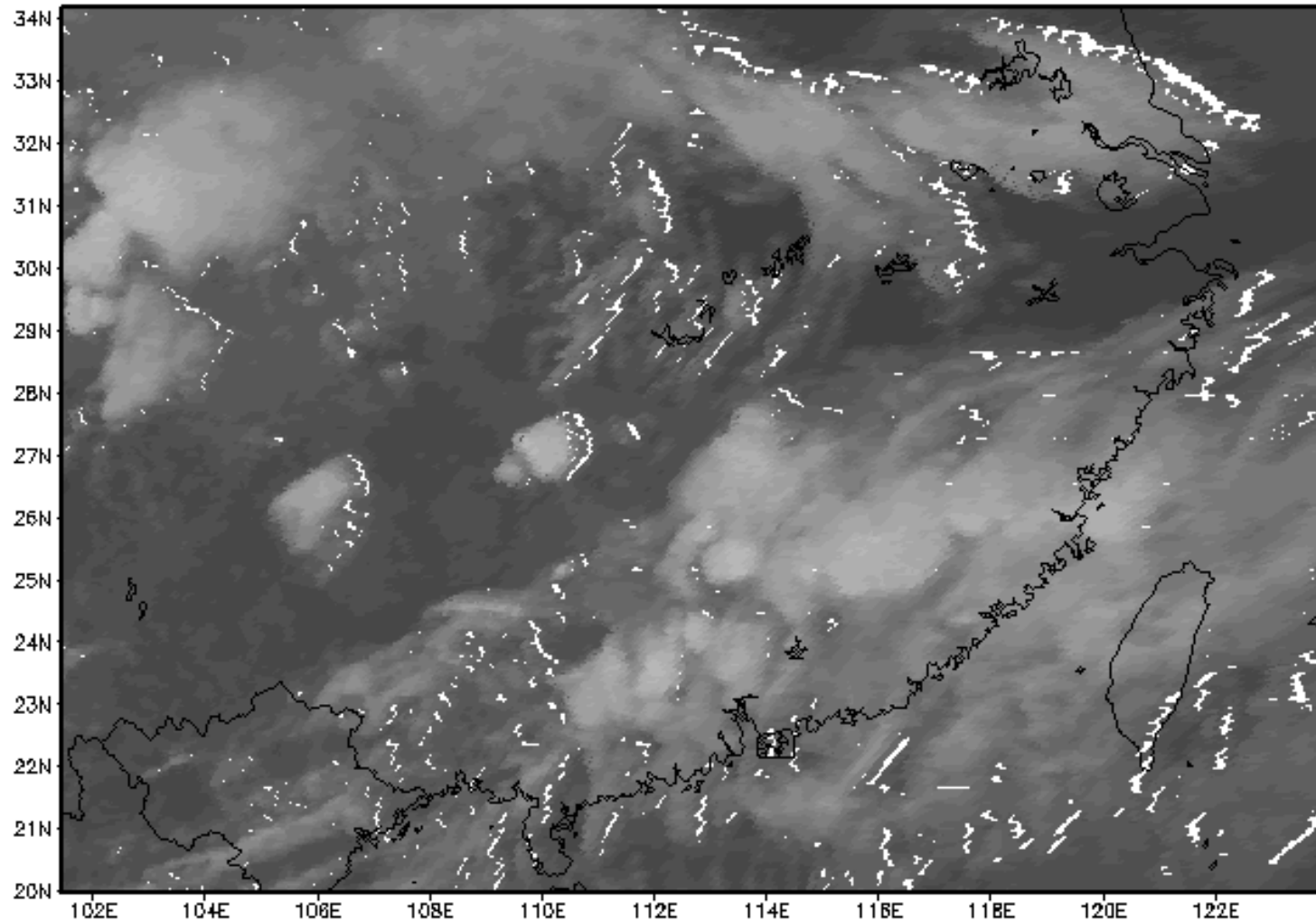
# 3D Cross Section and Visible Imagery Overlaid on Google Earth, June 21





# Merged IR Animation June 18-20, 2010

Global Merged IR (00min12Z18JUN2010)  
Created by NASA Goddard GES DISC





# Dartmouth Flood Observatory

Current Flooding  
MODIS data obtained  
May 25, 2010



Previous Flooding  
(This Year Only)



Past Flooding  
(1997-Present)



Surface Water  
March 15, 2009

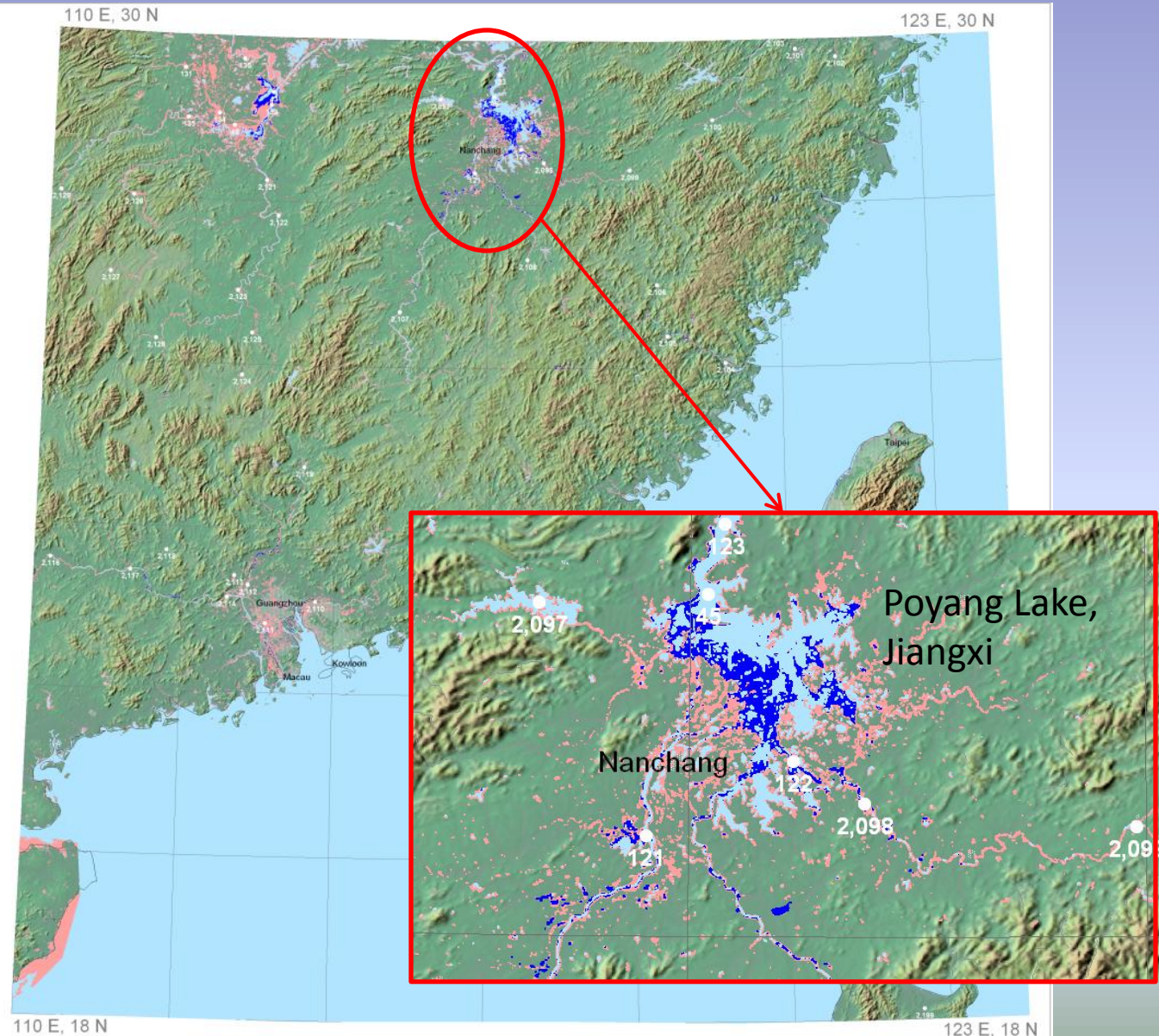


Urban Areas



G. R. Brakenridge  
Alexis Coplin  
Minal Caron

UTM Zone 50 North; WGS 84  
Graticule: 2 degrees



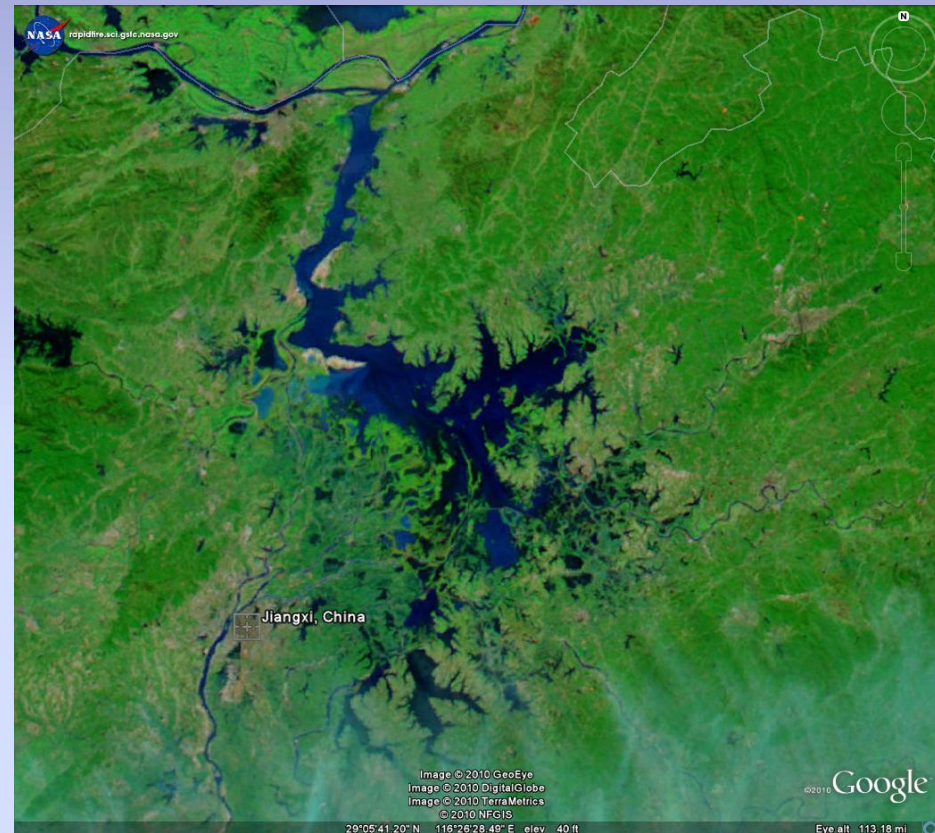


# Comparing MODIS Images In Google Earth

## Poyang Lake: March 19, 2010



True Color



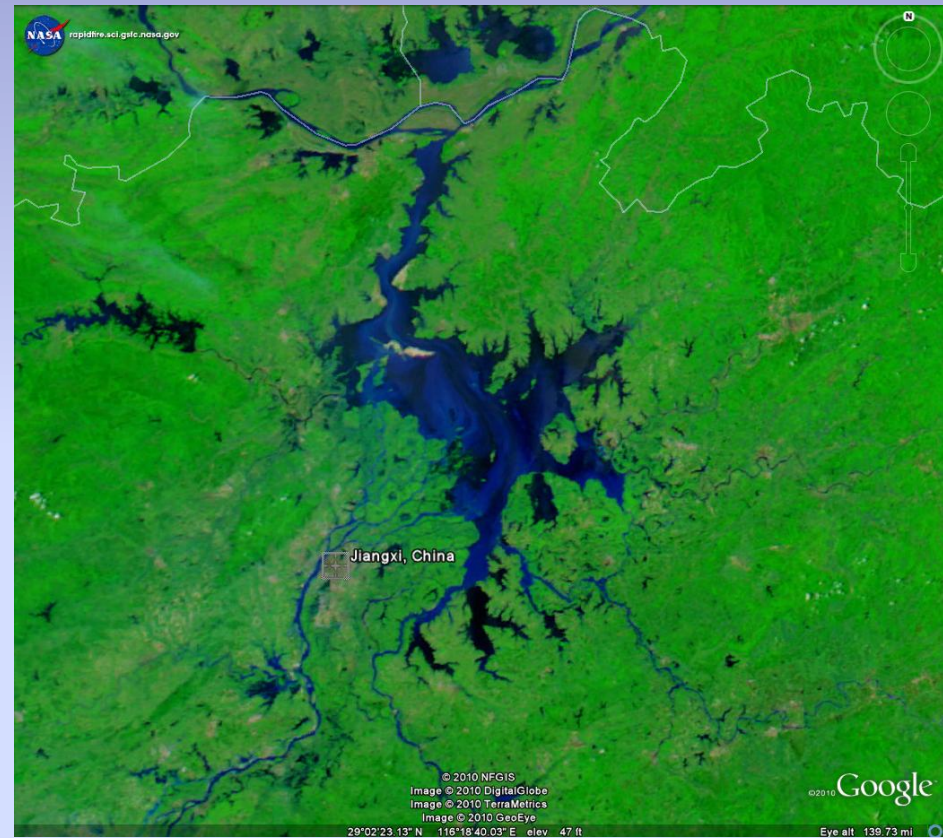
Bands 7-2-1



# Poyang Lake: May 24, 2010



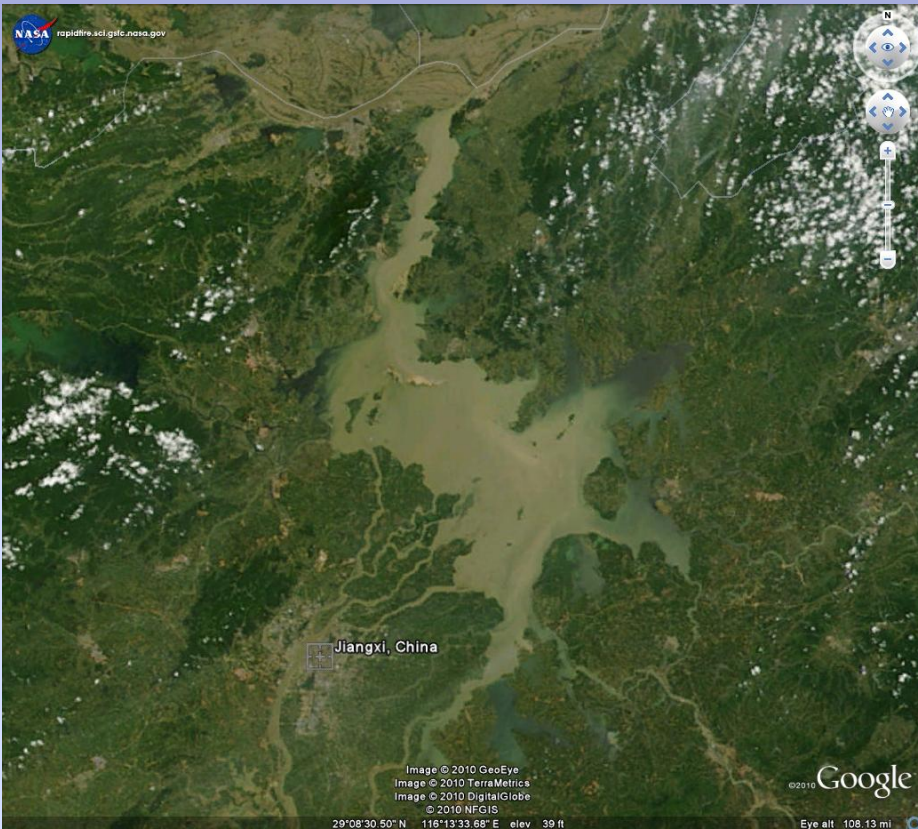
True Color



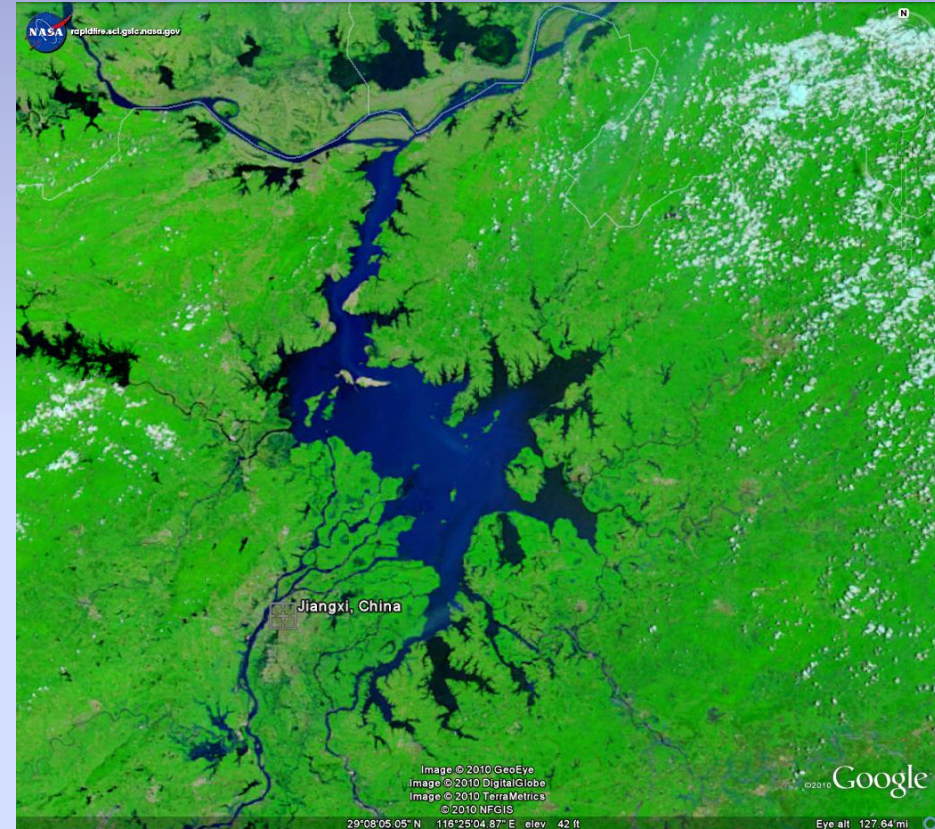
Bands 7-2-1



# Poyang Lake: July 1, 2010



True Color



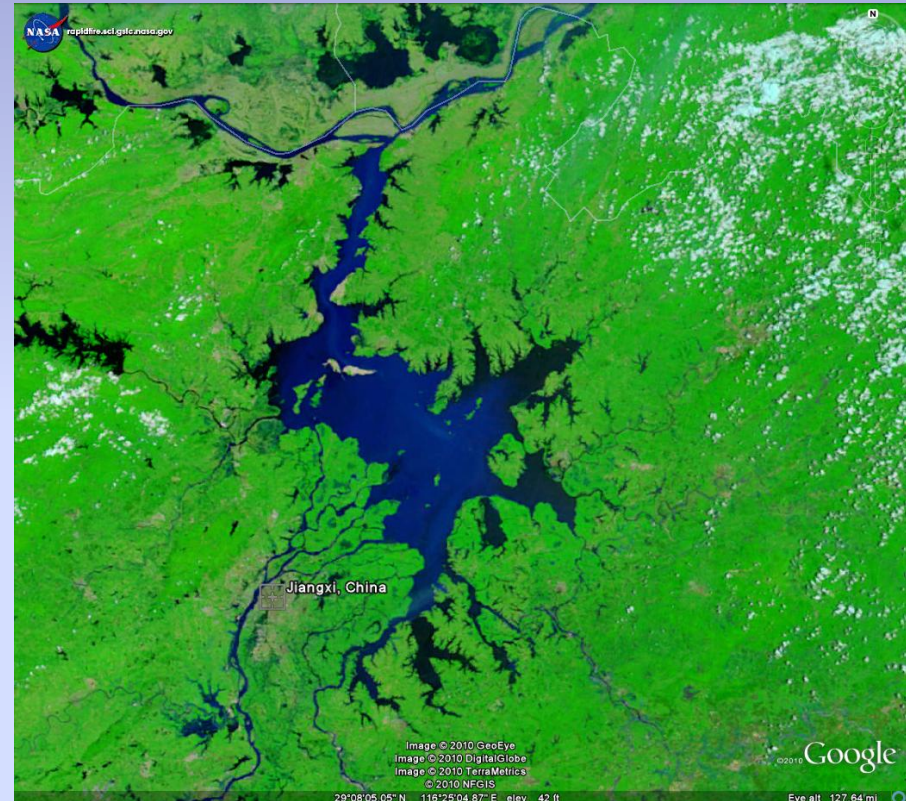
Bands 7-2-1



# Poyang Lake Flood



April 17, 2008



July 1, 2010

















